



COPY

PATENTS
104005-0111

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re The Application of:)
John T. Lynch et al.)

Serial No.: 09/544,735)

Examiner: Melanie Jagannathan

Filed: April 7, 2000)

Art Unit: 2666

For: METHOD AND APPARATUS)
FOR DYNAMIC ALLOCA-)
TION OF CONFERENCING)
RESOURCES IN A TELE-)
COMMUNICATIONS SYSTEM)

Cesari and McKenna, LLP
88 Black Falcon Avenue
Boston, MA 02210
February 2, 2005

"Express Mail" Mailing-Label Number: EV 433572497 US

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

AMENDMENT

In response to the Office action dated November 3, 2004, please enter the following amendments:

IN THE CLAIMS:

1 1. (Cancelled)

1 2. (Currently Amended) A method of providing conferencing resources in an ex-
2 pandable telecommunications system having a plurality of nodes, and a host coupled to at
3 least one node for controlling the system in which conferencing resources are utilized by
4 one or more nodes participating in a conference, the method including the steps of:

5 (A) providing the plurality of nodes with means for connecting and discon-
6 necting communications paths between a plurality of ports having digital network/line
7 interfaces that couple the node with the PSTN and private networks, said nodes including
8 switching nodes that can switch communications to any port connected to the system, and
9 at least two of said switching nodes being conferencing nodes, said conferencing nodes
10 including individual digital signal processing (DSP) circuits programmed to perform a
11 conference between three or more participants who are callers connected at any port in
12 the system and said conferencing nodes are also capable of switching communications,
13 including conferenced output to any other port interfaced with the system from the PSTN
14 and private networks, and said switching nodes, including said conferencing nodes, hav-
15 ing switching buses on which that node is assigned time slots for transmitting and re-
16 ceiving data and control information and said switching nodes, including said
17 conferencing nodes, being connected in communicating relationship by an inter-nodal
18 network;

19 (B) coupling one or more participants to said PSTN and private networks via a
20 telecommunication device, without requiring that said coupling to be made via Internet
21 connection;

22 [[(B)]] (C) at the time of request, defining a requested conference as being of one
23 of a dynamic conference type, a critical conference type and a static conference type;
24 [[(C)]] (D) identifying the DSP circuit within a conferencing node that satisfies at least
25 one of the following:

- 26 (i) the greatest amount of available channels in said system so that the
27 conference can grow as large as possible;
28 (ii) is currently handling no other conferences so that all channels are
29 available for use by the conference; and
30 (iii) has a "best fit" such that the system can attempt to fit as many con-
31 ferences as possible on a single DSP chip before assigning confer-
32 ences to another DSP chip; and

33 ~~[(D)]~~ (E) after one or more of said DSP circuits have been identified, deter-
34 mining whether the node in which said identified DSP circuit is located has sufficient
35 available time slots on its switching bus to manage the data to and from all of the partici-
36 pants in the requested conference.

1 3. (Currently Amended) A method of providing conferencing resources in an ex-
2 pandable telecommunications system having a plurality of nodes, and a host coupled to at
3 least one node for controlling the system in which conferencing resources are utilized by
4 one or more nodes participating in a conference, the method including the steps of:

5 (A) providing the plurality of nodes with means for connecting and discon-
6 necting communications paths between a plurality of ports having digital network/line
7 interfaces that couple the node with the PSTN and private networks, said nodes including
8 switching nodes that can switch communications to any port connected to the system, and
9 at least two of said switching nodes being conferencing nodes, said conferencing nodes
10 including individual digital signal processing (DSP) circuits programmed to perform a
11 conference between three or more participants who are callers connected at any port in
12 the system, and said switching nodes having switching buses on which that node is as-
13 signed time slots for transmitting and receiving data and control information and said
14 switching nodes being connected in communicating relationship by an inter-nodal net-
15 work;

16 (B) defining a requested conference as being of one of a dynamic conference
17 type, a critical conference type and a static conference type, including determining con-

18 ference type by employing statistical analysis and/or historical data about past system
19 conference behavior in said statistical analysis to predict conference type;

20 (C) identifying the DSP circuit within a conferencing node that has available
21 resources for performing a conferencing function for a conference of that type as re-
22 quested in the system[]; and

23 (D) after said DSP circuit has been identified, determining whether the node in
24 which said identified DSP circuit is located has sufficient available time slots on its
25 switching bus to manage the data to and from all of the participants in the requested con-
26 ference.

1 4. (Cancelled)

1 5. (Previously Presented) The method of providing conferencing resources as de-
2 fined in claim 2, including the further step of employing user-defined parameters to de-
3 termine conference type.

1 6. (Previously Presented) The method of providing conferencing resources as de-
2 fined in claim 3, including the further step of using historical information about an aver-
3 age conference generally handled by a particular system and handled at a particular port
4 to predict conference type.

1 7. (Previously Presented) The method of providing conferencing services as defined
2 in claim 2, including the further step of defining as said dynamic conference a conference
3 that is likely to change in size based upon predetermined criteria.

1 8. (Previously Presented) The method of providing conferencing services as defined
2 in claim 7, including the further step of assigning the DSP circuit card having the maxi-
3 mum available capacity to a conference which has been identified as a dynamic confer-
4 ence.

1 9. (Previously Presented) The method of providing conferencing services as defined
2 in claim 8, including the further step of selecting for a dynamic conference the DSP cir-
3 cuit in the system having as many channels as possible such that a conference can grow
4 as large as possible and that channels remain available for participants who join the con-
5 ference while in progress.

1 10. (Previously Presented) The method of providing conferencing services as defined
2 in claim 2 including the further step of defining as said critical conference a conference
3 that requires the maximum opportunity for growth in the system.

1 11. (Previously Presented) The method of providing conferencing services as defined
2 in claim 10 including the further step of selecting, for a critical conference, the DSP cir-
3 cuit with the maximum available capacity and instructing the DSP circuit with said
4 maximum available capacity to reserve these conference resources and to establish the
5 conference, and further instructing the DSP circuit to block other conferences from being
6 assigned to that DSP circuit such that capacity remains available for that critical confer-
7 ence, for the life of that critical conference.

1 12. (Previously Presented) The method of providing conferencing services as defined
2 in claim 11 including the further step of revealing blocked channels for use by the DSP
3 circuit, after the critical conference is finished.

1 13. (Previously Presented) The method of providing conferencing services as de-
2 fined in claim 2, including the further step of defining as said static conference a confer-
3 ence in which the number of participants will remain substantially constant.

1 14. (Previously Presented) The method of providing conferencing services as defined
2 in claim 13, including the further step of assigning a static conference to a DSP circuit on
3 a "best fit" basis.

1 15. (Currently Amended) A method of providing conferencing resources in an ex-
2 pandable telecommunications system having a plurality of nodes, and a host coupled to at
3 least one node for controlling the system in which conferencing resources are utilized by
4 one or more nodes participating in a conference, the method including the steps of:

5 (A) providing said telecommunications system with a line-to-switch
6 (LSD) data bus comprised of multiple individual bus conductors, each bus con-
7 ductor carrying time slots coming into the node from line cards, including T1 line
8 cards, and said system further including a switch-to-line (SLD) data bus com-
9 prised of multiple individual bus conductors that carry time slots of PCM-encoded
10 data from a nodal switch in the node back out to a destination line card;

11 (B) defining a requested conference as being of one of a dynamic con-
12 ference type, a critical conference type and a static conference type;

13 (C) identifying the DSP circuit within a conferencing node that has
14 available resources for performing a conferencing function for a conference of the
15 type requested; and

16 (D) identifying a zone of time slots having the lowest order of alloca-
17 tion such that it is least likely to be taken when a new T1 card is inserted into the
18 system during operation, and assigning a conferencing node to use these lowest
19 orders of allocation time slots for a requested conference.

1 16. (Previously Presented) The method of providing conferencing resources as de-
2 fined in claim 15, including the step of:

3 (a) allocating zones of time slots in such a manner that 192 time slots of a T1
4 span are divided into the following segments:

5 time slots 0-191 are in the regular T1 channel;

6 time slots 192-215 are the lower dead zone;

7 time slots 216-223 are in the lower small dead zone;

8 time slots 224-247 are in the upper large dead zone; and

9 time slots 248-255 are in the upper small dead zone; and

10 (b) assigning time slots in the lower and upper small dead zones of the indi-
11 vidual bus conductors to conferences.

1 17. (Cancelled)

1 18. (Currently Amended) An expandable telecommunications system having means
2 for conferencing three or more participants interfaced with the system, the system com-
3 prising:

4 (A) a plurality of nodes for performing telecommunications switching, each of
5 said switching nodes including means for dynamically connecting or disconnecting
6 communication paths with respect to various ones of a plurality of ports, means for time
7 switching information to or from said ports, means for coupling the node with the PSTN
8 and private networks via digital network/line interfaces, said nodes including switching
9 nodes that can switch communications to any port connected to the system via the PSTN
10 and private networks, and means for transmitting and receiving information in packetized
11 form, and means connected in communicating relationships including a bus for carrying
12 data to and from said ports;

13 (B) a host connected in communicating relationship with at least one of said
14 switching nodes, said host controlling predetermined operations of the system;

15 (C) means in said switching nodes for generating and sending a message re-
16 questing establishment of a conference call for at least three conferees connected to one
17 or more of said nodes;

18 (D) means for interconnecting said switching nodes in communicating rela-
19 tionships and operable in conjunction with said transmitting and receiving means to trans-
20 fer said packetized information such that information which originates from any port in
21 the switching nodes is substantially continuously communicable to any node interfaced
22 with said interconnecting means;

23 (E) at least one conferencing node for providing conferencing services, said at
24 least one conferencing node interfaced with said interconnecting means and including
25 individual DSP circuits, said conferencing node also having means for switching com-

26 munications, including conferenced output to any other port interfaced with the system
27 from the PSTN and private networks; and

28 (F) means for allocating conferencing resources including:

29 1. means for determining whether a DSP circuit in a conferencing
30 node has available conferencing resources to perform a requested conference; and

31 2. means for determining whether the conferencing node has suffi-
32 cient available time slots on its switching buses to manage the data to and from the con-
33 ferences or a particular requested conference [[The expandable telecommunications sys-
34 tem as defined in claim 17 further comprising:]]

35 [[A.]] G. a DSP card in said conferencing node, including:

36 1. a DSP module which contains a plurality of DSP circuits; and
37 2. a CPU including means for receiving messages about conferences
38 to be established, and means for routing voice information to a DSP chip identified for a
39 particular conference; and

40 [[B.]] H. line-to-switch (LSD) data bus interfaced with line cards which
41 connect ports in the system, and which carries a PCM-encoded voice information from
42 the line cards to said DSP cards.

1 19. (Previously Presented) The expandable telecommunications system as defined in
2 claim 18 wherein said voice information for paid conference arrives at a port coupled
3 with one or more of the following:

- 4 a. a landline telephone;
5 b. the PSTN;
6 c. a private network;
7 d. a wireless network; and
8 e. the Internet.

1 20. (New) A method of providing conferencing resources in a telecommunications
2 system, including the steps of:

3 (A) coupling a participant with a telecommunications device without requiring
4 that said coupling include an Internet connection, including:

5 (i) a landline telephone connected to either the PSTN, a pri-
6 vate network or a wireless connection;

7 (ii) a mobile telephone; and

8 (iii) a personal computer;

9 (B) at the time of a conference request, defining a conference as being one of a
10 dynamic conference type, a critical conference type and a static conference type; and

11 (C) assigning resources within said telecommunications switching system by
12 identifying a node having a DSP circuit that has sufficient available channels to accom-
13 modate the conference as defined.

1 21. (New) The method of providing conferencing resources in a telecommunications
2 system as defined in claim 20, including the further step of:

3 assigning said resources to a DSP circuit that satisfies at least one of the following
4 conditions:

5 (a) has the greatest amount of currently available channels in said
6 system so that the conference can grow as large as possible;

7 (b) is currently handling no other conferences so that all channels are
8 available for use by the conference; and

9 (c) has a "best fit" such that the system can attempt to fit as many con-
10 ferences as possible on a single DSP chip before assigning conferences to
11 another DSP chip.

REMARKS

The Office Action dated November 3, 2004, has been reviewed carefully and the application has been amended in a sincere effort to place the claims in condition for allowance.

Claim Objections

Claim 3 was objected to due to a typographical error and the correction has been made in accordance with the Examiner's request.

Double Patenting

Claims 2 and 17 were rejected under the judicially created doctrine of obviousness type double patenting as being unpatentable over claims 1 – 10 and 13 of Hebert et al., United States Patent No. 5, 920,546 ("Hebert") in view of Phaal, United States Patent No. 6,055,564 ("Phaal").

Briefly, Applicant's invention as claimed in claims 2 and 17 involves a method of providing conferencing services for many types of conferences including large conferences of 30 or more participants as well as conferences that may change in size dynamically. In addition, the inventive conferencing services can be provided to participants that are coupled to the system via any type of telecommunication device, such as a conventional landline telephone, a mobile phone, and other personal communication devices. The Applicants' method includes defining a requested conference in a particular way in

order to most effectively accommodate the conference, if it is a priority, or to efficiently manage the resources of the system.

These features are not taught by the commonly owned Hebert reference. The Hebert system provides a conferencing function, but does not allow for defining a type of conference at the time of the request. In addition, Hebert does not use an algorithm for assigning the DSP circuit according to one of various parameters that can be user defined in order to accommodate the conference and/or to preserve system resources.

As noted by the Examiner, Hebert does not disclose the limitation of claim 2 that recites that the requested conference is defined as being one of a dynamic, critical and/or static type. In addition, Hebert does not teach identifying the DSP circuit which is appropriate for that particular type of conference. Thus, there is not obvious-type double patenting of the presently stated claim 2 with Hebert alone. Claim 17 has been cancelled.

In addition, Phaal does not render Applicants invention as claimed in claim 2 obvious. In addition to the distinctions outlined in previous responses filed by Applicants, Phaal does not provide for a large conference with participants coupled to the system via the PSTN or a private network using any type of telecommunications device, such as a traditional landline telephone. Phaal teaches a session establishment between a host and multiple clients which is conducted when a client interacts with a particular web site over the Internet via a personal computer. The Phaal system does not accommodate users who are coupled to the system via a traditional landline telephone, nor a mobile telephone that is not accessing a website, via the Internet. Thus, the Phaal system is of a more narrow scope in that, it requires participants to have Internet access and, in that environment,

Phaal provides solutions to Internet traffic to certain websites. It is not providing solutions about assigning DSP resources in the most efficient or dependable manner to assure conferencing services are reliably provided depending upon the defined conference type and for multiple participants, each of whom may be using any one of a variety of telecommunications devices, as provided by Applicant's method. Further, the combination of Hebert and Phaal does not render Applicant's invention obvious because Hebert does not suggest defining a conference type, nor an algorithm for selecting the correct DSP card, and Phaal does not suggest or teach participants who are coupled to the system via telephone devices, that are not coupled to the Internet. Claim 2 has been amended herein to clarify these distinctions, and it is respectfully submitted that the claim as amended is not obvious in view of Hebert and Phaal and further, claim 2 now in condition for allowance. Claim 17 has been cancelled.

Claim Rejections – 35 U.S.C. § 103(a)

Claims 2, 5, 7-13 and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Hebert and Phaal.

The distinctions which newly amended claim 2 has over both references are set forth above. Claim 5, which is dependent upon claim 2, adds the further limitation that user-defined parameters can be employed in providing the conferencing services. Once again, the Phaal system which admits new client requests to sessions in progress on a host web site does not render obvious Applicants' method of providing conferencing services

in a telecommunications system, which method is a procedure for assigning DSP resources to increase dependability and resource management in handling large voice conferences. The method of claim 2 is not rendered obvious in view of either Herbert or Phaal alone or in combination. Hebert does not teach predefining a conference type and assigning node having the best DSP resources for that conference, and Phaal teaches nothing about voice conferencing using DSP cards at all, and Phaal's system cannot accommodate participants who are not using a personal computer coupled to the Internet. Thus, the references do not alone, nor in combination disclose, teach or suggest Applicants' improved conferencing system and method as claimed in the amended claims.

Claims 7 through 13 are dependent directly or indirectly on newly amended claim 2, and they add even further limitations to that which is claimed in amended independent claim 2, and it is respectfully submitted that they are thus in condition for allowance.

Claim 14 was rejected under 35 U.S.C. §103(a) as unpatentable over Hebert and Phaal in view of United States Patent No. 6,324,169 to Roy ("Roy").

Claim 14 is indirectly dependent upon newly amended claim 2, and adds the further limitation that a static conference can be assigned to a DSP on a "best fit" basis. Roy's conferencing resources are provided via a wide area network that is interconnected with routers that in turn serve switched LAN hubs that communicate with customers workstations. In contrast, Applicants' method, involves the actual switching nodes and conferencing nodes which intake the voice information to create a conferenced output and switch this back out to the participants. Applicants' method can utilize circuit switched or packet switched incoming information. Roy is a programmed system for

providing multimedia conferencing over a packet switched network. As claimed in claim 2 allows for participants to be coupled to the system via any telecommunication device that can be coupled to the PSTN or a private network, but does not have to be a part of the specially programmed system as defined by Roy.

Allowable Subject Matter

Claim 3 was rewritten in independent form in the previous response and it is respectfully submitted that it is now in condition for allowance. Claim 6 depends upon claim 3. Claim 15 was previously amended to include the elements of the base claim, and claim 16 depends upon claim 15. Claim 18 has been rewritten herein in independent form to include the elements in the base claim, and claim 19 is dependent upon claim 18. New claims 20 and 21 been added.


SUMMARY

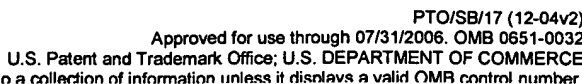
Applicants respectfully submit that in view of the amendments and arguments herein, all of the objections and rejections have been addressed and overcome, and reconsideration and allowance is respectfully requested. Please do not hesitate to contact the undersigned in order to advance the prosecution of this application in any respect.

Please charge any additional fee occasioned by this paper to our Deposit Account

No. 03-1237.

Respectfully submitted,


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Complete if Known

Application Number	09/544,735
Filing Date	April 7, 2000
First Named Inventor	John T. Lynch et al.
Examiner Name	Melanie Jagannathan
Art Unit	2666
Attorney Docket No.	104005-0111

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT	(\$)	1,810.00
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METHOD OF PAYMENT (check all that apply)

☒ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify):

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☒ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17

☒ Credit any overpayments

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FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	Filing Fees		Search Fees		Examination Fees		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

<u>Fee Description</u>	<u>Fee (\$)</u>	<u>Fee (\$)</u>
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

<u>Total Claims</u>	<u>Extra Claims</u>	<u>Fee (\$)</u>	<u>Fee Paid (\$)</u>
- 20 or HP =	x	=	

HP = highest number of total claims paid for, if greater than 20.

<u>Indep. Claims</u>	<u>Extra Claims</u>	<u>Fee (\$)</u>	<u>Fee Paid (\$)</u>
- 3 or HP =	x	=	

HP = highest number of independent claims paid for, if greater than 3.

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

<u>Total Sheets</u>	<u>Extra Sheets</u>	<u>Number of each additional 50 or fraction thereof</u>	<u>Fee (\$)</u>	<u>Fee Paid (\$)</u>
- 100 =	/ 50 =	(round up to a whole number) x	=	

4. OTHER FEE(S)


Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): RCE and Three Month Extension of Time

Fees Paid (\$)

1,810.00

SUBMITTED BY

Signature		Registration No. (Attorney/Agent) 30,585	Telephone (617) 951-2500
Name (Print/Type)	Rita M. Rooney		Date May 2, 2005

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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104005-0111

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In Re The Application of:
John T. Lynch et al.

Serial No.: 09/544,735

Filed: April 7, 2000

For: METHOD AND APPARATUS FOR
DYNAMIC ALLOCATION OF
CONFERENCING RESOURCES IN
A TELECOMMUNICATIONS
SYSTEM

Examiner: Melanie Jagannathan

Art Unit: 2666

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Boston, MA 02210
May 2, 2005

EXPRESS-MAIL DEPOSIT

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The following papers are being deposited with the United States Postal Service
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X Request for Continued Examination
X Check No. 30361 for \$1,810.00
X Copy of an Amendment previously
filed on February 2, 2005

X Fee Transmittal Letter
X Petition 3 Months of Extended Time
X Return Receipt Postcard